terminals overlie the bottom surface of the chip. Leads including bonding wires extending alongside the edges of the chip connect the contacts and the terminals. The terminals of the assembly are movable with respect to the chip.

In the Claims:

Cancel claims 1-60.

Insert new claims 61-89 as follows:

~~61.~~ A semiconductor assembly comprising:

a semiconductor chip having oppositely facing front and rear surfaces and edges extending between said front and rear surfaces, said chip further having contacts on a peripheral region of said front surface;

a backing element having electrically conductive terminals and lead portions thereon, wherein said lead portions are connected to said terminals, said backing element overlying said rear surface of said semiconductor chip such that at least some of said terminals overlie said rear surface of said chip;

bonding wires connected to said contacts on said front surface of said chip, said bonding wires extending downwardly alongside said edges of said chip and being connected to the lead portions on the backing element;

wherein said terminals are movable with respect to said chip.

~~62.~~ The semiconductor assembly as claimed in claim ~~61~~, wherein said backing element includes a polymeric dielectric material.

~~63.~~ The semiconductor assembly as claimed in claim ~~61~~, wherein said backing element is flexible to facilitate the movement of the terminals with respect to the chip.

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~~64.~~ The semiconductor assembly as claimed in claim ~~63~~, wherein said lead portions are flexible.

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~~65.~~ The semiconductor assembly as claimed in claim ~~62~~, wherein said backing element is a flexible sheet of a material selected from the group comprising polyimide, fluoropolymer, thermoplastic polymer and elastomers.

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~~66.~~ The semiconductor assembly as claimed in claim ~~61~~, wherein said chip contacts define a first center-to-center distance between adjacent chip contacts and said terminals define a second center to center distance between adjacent terminals, said second center to center distance being larger than said first center to center distance.

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~~67.~~ The semiconductor assembly as claimed in claim ~~61~~, wherein the backing element is adapted to control the impedance of said lead portions thereon.

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~~68.~~ The semiconductor assembly as claimed in claim ~~67~~, wherein the backing element includes an electrically conductive layer adapted to aid the electrical isolation of the terminals from the chip and to provide better control of impedances in said lead portions.

9 1
~~69.~~ The semiconductor assembly as claimed in claim ~~61~~, wherein:

a) said backing element has a top surface facing toward the chip and a bottom surface facing away from the chip; and

b) said lead portions and terminals are located on said top surface of said backing element.

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~~70.~~ The semiconductor assembly as claimed in claim ~~69~~, the backing element further including holes therethrough from said top surface to said bottom surface, wherein the terminals are exposed through said holes.

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~~71~~. The semiconductor assembly as claimed in claim ~~70~~, further including bonding material attached to said terminals through said holes.

12 1
~~72~~. The semiconductor assembly as claimed in claim ~~61~~, wherein:

a) said backing element has a top surface facing toward the chip and a bottom surface facing away from the chip; and

b) said lead portions and terminals are located on said bottom surface of said backing element.

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~~73~~. The semiconductor assembly as claimed in claim ~~72~~, further including a flexible dielectric material connected to and covering at least a portion of said bottom surface of said backing element, wherein said flexible dielectric material has apertures such that the terminals are exposed therethrough and whereby the flexible dielectric material acts as a solder mask.

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~~74~~. The semiconductor assembly as claimed in claim ~~61~~, wherein the bonding wires are connected on at least one end by a Z-conducting adhesive.

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~~75~~. The semiconductor assembly as claimed in claim ~~74~~ wherein the bonding wires are connected to said contacts of said chip by Z-conducting adhesive.

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~~76~~. The semiconductor assembly as claimed in claim ~~61~~, wherein said bonding wires are connected on at least one end by ultrasonic or thermosonic energy.

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~~77~~. The semiconductor assembly as claimed in claim ~~61~~ or claim ~~64~~, further comprising a compliant layer disposed between said backing element and said rear surface of said chip to facilitate the movement of said terminals.

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~~78~~. The semiconductor assembly as claimed in claim ~~77~~, wherein said compliant layer is comprised of a low-modulus material.

19 ~~79~~. The semiconductor assembly as claimed in claim 17 ~~77~~, wherein said compliant layer is disposed between said terminals and said chip.

20 ~~80~~. The semiconductor assembly as claimed in claim 17 ~~77~~, wherein said compliant layer permits independent movement of said terminals.

21 ~~81~~. The semiconductor assembly as claimed in claim 17 ~~77~~, further comprising a dielectric encapsulant covering at least a portion of said bonding wires and at least a portion of said edges and said front surface of said chip.

22 ~~82~~. The semiconductor assembly as claimed in claim 21 ~~81~~, further comprising a thermally conductive layer bonded to said front surface of said chip.

23 ~~83~~. The semiconductor assembly as claimed in 21 ~~81~~, wherein the encapsulant is compliant.

24 ~~84~~. The semiconductor assembly as claimed in claim 1 ~~61~~, wherein said terminals are movable in a direction parallel to said rear surface of said chip.

25 ~~85~~. The semiconductor assembly as claimed in claim 1 ~~61~~ or claim 24 ~~84~~, wherein the terminals are movable in a direction perpendicular to said rear surface of said chip.

26 ~~86~~. The semiconductor assembly as claimed in claim 1 ~~61~~, further comprising a dielectric encapsulant covering at least a portion of said bonding wires and at least a portion of said edges and said front surface of said chip.

27 ~~87~~. The semiconductor assembly as claimed in claim 26 ~~86~~, further comprising a thermally conductive layer bonded to said front surface of said chip.